

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A scintillation detector comprising a substantially cylindrical crystal element ~~mounted in~~ hermetically sealed within a substantially cylindrical housing, one end of said housing adapted for coupling with a photo-multiplier tube, said substantially cylindrical crystal element wrapped ~~about a circumferential surface thereof~~ with reflective tape and a polyamide layer, and with a gadolinium foil located radially between said polyamide layer and said housing, said gadolinium foil, in use, excluding thermal neutrons from the crystal element.

2. (Original) The scintillation detector of claim 1 wherein said crystal element is formed with a conical forward portion, and wherein said conical portion is also wrapped with gadolinium foil.

3. (Previously Presented) The scintillation detector of claim 1 wherein a gadolinium disc covers a rear face of said crystal element.

4. (Original) The scintillation detector of claim 1 wherein said crystal element is comprised of sodium iodide.

5. (Original) The scintillation detector of claim 1 including a photo-multiplier tube affixed to a forward end of said crystal element.

6. (Cancelled).

7. (Cancelled).

8. (Cancelled).

9. (Currently Amended) A scintillation detector comprising a substantially cylindrical crystal element ~~mounted in~~ hermetically sealed within a substantially cylindrical housing; a radial and axial support assembly within said housing, located radially between said crystal element and said housing, said radial and axial support assembly including ~~a gadolinium foil sleeve substantially surrounding said crystal element~~ a radially outer sleeve and a radially inner sleeve, and wherein a gadolinium foil sleeve is located radially between said radially outer and radially inner sleeves, said gadolinium, in use, foil excluding thermal neutrons from the crystal element.

10. (Original) The scintillation detector of claim 9 including a photo-multiplier tube affixed to a forward end of said crystal element.

11. (Original) The scintillation detector of claim 10 wherein said radial and axial support assembly includes a circular disc of gadolinium covering a rearward face of said crystal element.

12. (Original) The scintillation detector of claim 9 wherein said crystal element is formed with a conical forward portion, and wherein said conical portion is also wrapped with gadolinium foil.

13. (Cancelled).

14. (Currently Amended) The scintillation detector of claim ~~13~~ 9 wherein said radially outer sleeve is comprised of stainless steel.

15. (Original) The scintillation detector of claim 14 wherein said radially inner sleeve is comprised of a polyamide.

16. (Original) The scintillation detector of claim 14 wherein an aluminum collar is fixed to an underside of said radially outer sleeve at one end thereof, and wherein said gadolinium foil sleeve extends across said collar.

17. (Original) The scintillation detector of claim 16 wherein said gadolinium foil sleeve is adhesively secured on a radially inner surface thereof to said radially inner sleeve only in an area that is aligned with said aluminum collar.

WILLIAMS

Appl. No. 10/065,258

August 10, 2004

18. (Original) The scintillation detector of claim 17 wherein most of a remaining area of said radially inner surface is covered with grease.

19. (Original) The scintillation detector of claim 16 wherein a radially outer surface of said gadolinium foil is adhesively secured to said underside of said radially outer sleeve.

WILLIAMS

Appl. No. 10/065,258

August 10, 2004

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 2. In Figure 2, previously omitted element 73 has been added.

Attachment: Replacement Sheet(s)
Annotated Sheet Showing Changes